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United States Patent [19]

Gabriel et al.

[54] **METHOD AND SYSTEM FOR TEXTURE MAPPING IMAGES WITH ANISOTROPIC FILTERING**

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Related U.S. Application Data

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[52] U.S. Cl. **345/430**

[58] Field of Search 345/418–20, 430–31, 345/433–37, 501–85

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[57] **ABSTRACT**

A method for texture mapping an image includes passing an interpolating filter along a line of anisotropy in a texture map and computing a weighted sum of the outputs of the interpolating filter to compute pixel intensity values. The weighting of these output values can be computed using a one dimensional digital filter. The line of anisotropy is derived from the inverse transform, which describes the mapping of a point on the surface of a geometric primitive to a point in the texture map. A system supporting anisotropic filtering includes texture memory, a set-up processor, and a texture filter engine. The set-up processor parses a command stream and retrieves texture data into the texture memory. The texture filter engine determines the line of anisotropy for a pixel and computes a weighted sum of interpolated values sampled along the line of anisotropy.

24 Claims, 36 Drawing Sheets